CLAIMS

What is claimed is:

1. In the design of integrated circuits, a computer controlled method for placing cells, comprised of the computer implemented steps of:

a) generating a netlist through a synthesis process;

b) executing a cell separation process according to the netlist;

c) changing the netlist;

d) modifying spacings of the cells responsive to changes made to the netlist;

e) partitioning the cells into a plurality of partitions;

f) determining whether the partitions have converged, wherein steps b-e are repeated if convergence is not yet achieved.

2. The method of Claim 1 further comprising the step of changing a size of a placement area in response to changes made to the netlist.

3. The method of Claim 1, further comprising the step of inputting HDL, user constraints, and technology data into the synthesis process for generating the mapped netlist.

4. The method of Claim 1, wherein the netlist is comprised of a mapped netlist.

5. The method of Claim 1, wherein the cell separation process assigns an (x,y) location to each of the cells of the netlist.

6. The method of Claim 1, wherein the netlist is changed based on cell location information.

7. The method of Claim 6, wherein a change to the netlist includes sizing a gate up or down.

8. The method of Claim 6, wherein a change to the netlist includes adding or deleting one or more gates.

9. The method of Claim 1, wherein convergence is achieved when each partition has a number of cells less than a pre-determined value.

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10. A computer system including a processor coupled to a bus and a memory coupled to the bus, the system programmed to include a rough placement logic for placing cells of an integrated circuit design represented as a netlist having cells and connections between the cells, the rough placement logic comprising:

a cell separator for assigning locations to each of the cells of the netlist;

a synthesis tool for changing the netlist in response to cell location information, wherein a placement area is allowed to be scaled in response to changes made to the netlist;

a spacer for changing partition sizes, wherein the changes result in corresponding changes to the cells;

a partitioner for partitioning the cells into a plurality of separate partitions;

a comparator for determining whether the partitions have converged.

11. The computer system of Claim 10, wherein the netlist is comprised of a mapped netlist.

12. The computer system of Claim 10, wherein a change to the netlist includes sizing a gate up or down.

13. The computer system of Claim 10, wherein a change to the netlist includes adding or deleting one or more gates.

14. The computer system of Claim 10, wherein convergence is achieved when each partition has a number of cells less than a pre-determined value.

15. A computer-readable medium having stored thereon instructions for causing a computer to implement a placement process comprising the steps of:

a) generating a netlist through a synthesis process;

b) executing a cell separation process according to the netlist;

c) changing the netlist in response to cell location information;

d) altering a size of a placement area in response to a change made to the netlist;

e) spacing the cells apart according to a spacer process;

f) partitioning the cells into a plurality of partitions;

g) determining whether the partitions have converged, wherein steps b-f are repeated if convergence is not yet achieved.

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16. The computer-readable medium of Claim 15, further comprising the step of inputting HDL, user constraints, and technology data into the synthesis process for generating the mapped netlist.

17. The computer-readable medium of Claim 15, wherein the netlist is comprised of a mapped netlist.

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